

Motorola

HOME RADIO

MODELS
92-531
92-532
92-533
CHASSIS
HS-404

S E R V I C E M A N U A L

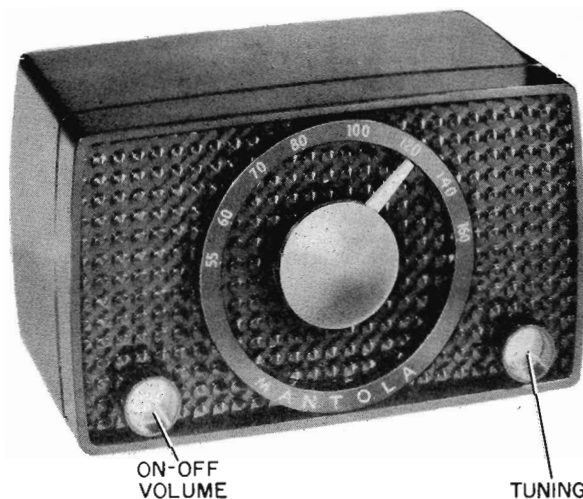
GENERAL INFORMATION

TYPE - AC-DC table model superheterodyne receiver with loop antenna.

RECEIVER MODELS -

Model	Color of Cabinet
92-531	Walnut
92-532	Ivory
92-533	Green

TUBE COMPLEMENT - Type	Function
12BE6	Converter
12BA6	IF Amplifier
12AT6	Det, AVC & 1st AF Amp
50C5	Power Amplifier
35W4	Rectifier



TUNING RANGE - 535 to 1620 Kc

IF - 455 Kc

POWER SUPPLY - 117 volts AC or DC, 35 watts

INSTALLATION & OPERATING INSTRUCTIONS

POWER SWITCH AND VOLUME CONTROL. Operated with the left-hand knob. NOTE: Reverse the line cord plug in the wall outlet if radio does not operate from DC. When operating from AC, reversing the line cord plug in the wall outlet may sometimes improve reception.

TUNING. Tune stations with the right-hand knob.

ANTENNA. A built-in loop antenna eliminates the need for an outside antenna in most locations. When receiving a weak station, rotate the receiver slightly for best signal strength. If additional pick-up is necessary, connect an external antenna to the radio by following the instructions printed on the rear panel. CAUTION: Never connect the radio chassis to a water pipe, radiator, or other ground.

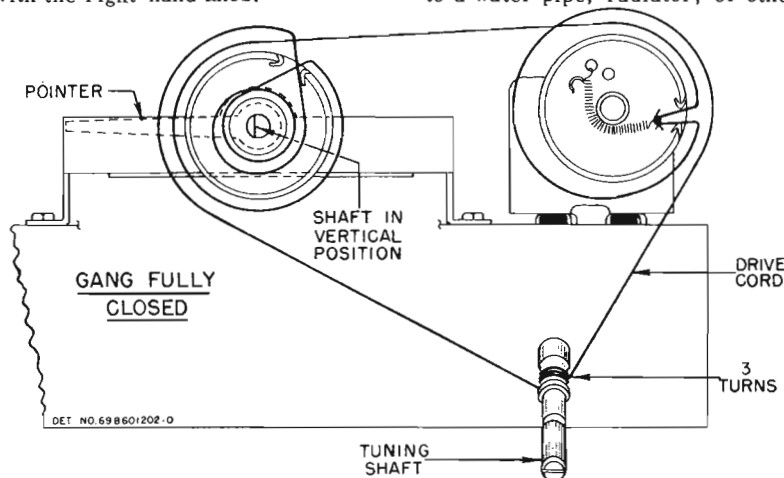


FIGURE 1. DIAL RESTRINGING DETAIL

LIST APPLICABLE BULLETINS & SUPPLEMENTS HERE:

MOTOROLA, INC. 4545 AUGUSTA BLVD. CHICAGO 51, ILLINOIS

SERVICE NOTES

The chassis of this receiver is isolated from the AC power line circuit by a capacitor to eliminate the shock hazard when handling the receiver. However, as an additional precaution when aligning or servicing the receiver from AC, an isolation transformer should be inserted between the power line and the chassis.

To remove the chassis from the cabinet:

1. Pull off the two radio control knobs.

2. Pull off the brass cover over the pointer.
3. Pull off the pointer.
4. Remove the split plugs which hold the loop to the cabinet.
5. From the back of the cabinet, remove the two hex head screws at the rear edge of the radio chassis.
6. Slide the radio chassis and loop from the cabinet.

ALIGNMENT

NOTE: It is recommended that an isolation transformer be placed between the power line and the receiver to avoid hum and electrical shocks. If an isolation transformer is not available, connect the low side of the signal generator to B- through a .1 mf capacitor.

1. Connect a low range output meter across the speaker voice coil.
2. Connect the low side of the signal generator to B-.
3. Set the signal generator for 400 cycle, 30% modulation.

4. Turn the receiver volume control to maximum.
5. Use a small fibre screwdriver for aligning the IF and diode transformers.
6. Adjust the signal generator to produce .40 volts (.05 watt) across the voice coil as stages are aligned, reduce generator output (not receiver volume control) to maintain the .40 volt level to avoid overloading the receiver.
7. See Figure 2 for adjustment locations and the following chart for procedure.

ALIGNMENT CHART

STEP	DUMMY ANTENNA	GENERATOR CONNECTION	GENERATOR FREQUENCY	GANG SETTING	ADJUST	REMARKS
IF ALIGNMENT						
1.	.1 mf	Grid of conv. (pin 7, 12BE6)	455 Kc	Fully open	1, 2, 3 & 4 (IF cores)	Adjust for maximum.
RF ALIGNMENT						
2.	.1 mf	Grid of conv. (pin 7, 12BE6)	1620 Kc	Fully open	5 (Osc)	Adjust for maximum.
3.		Radiation loop*	1400 Kc	Tune for max	6 (Ant)	Adjust for maximum.

*Connect generator output across 5" diameter, 5 turn loop and couple inductively to receiver loop. Keep loops at least 12" apart.

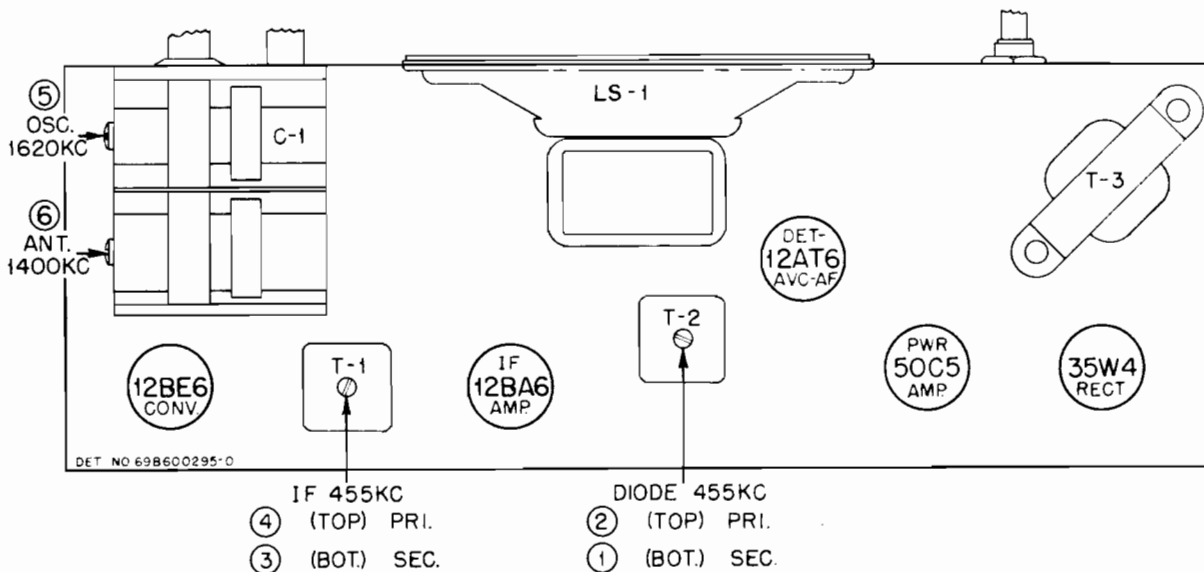


FIGURE 2. TUBE AND TRIMMER LOCATIONS

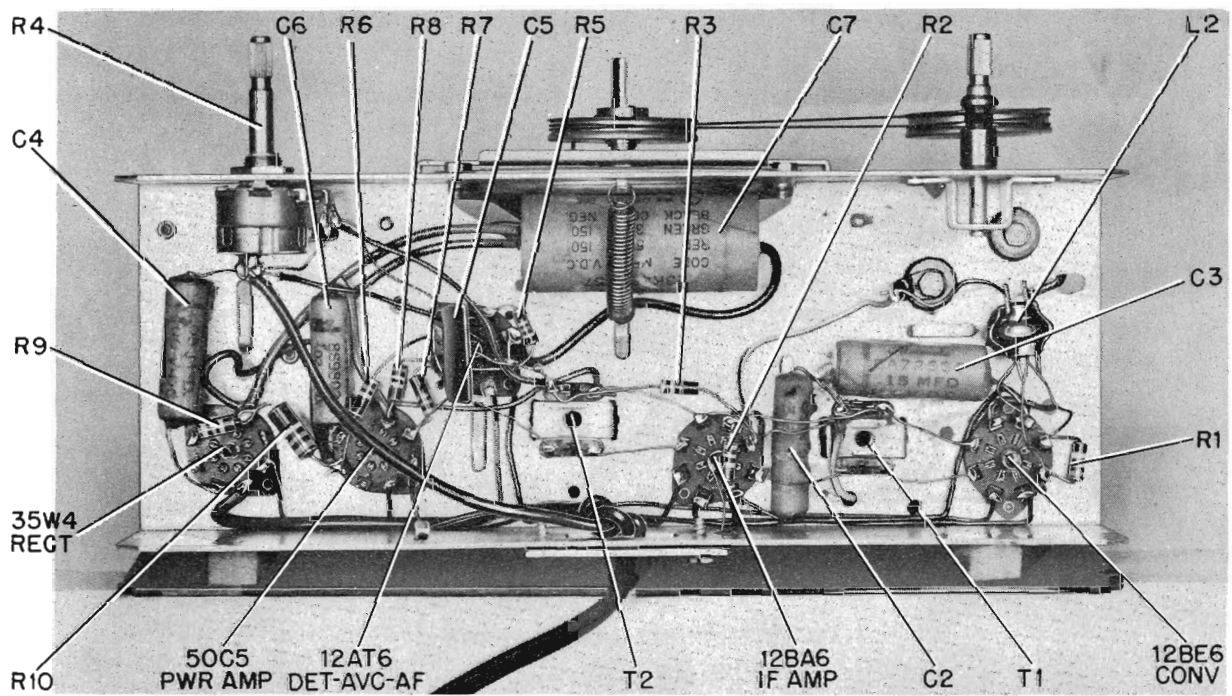
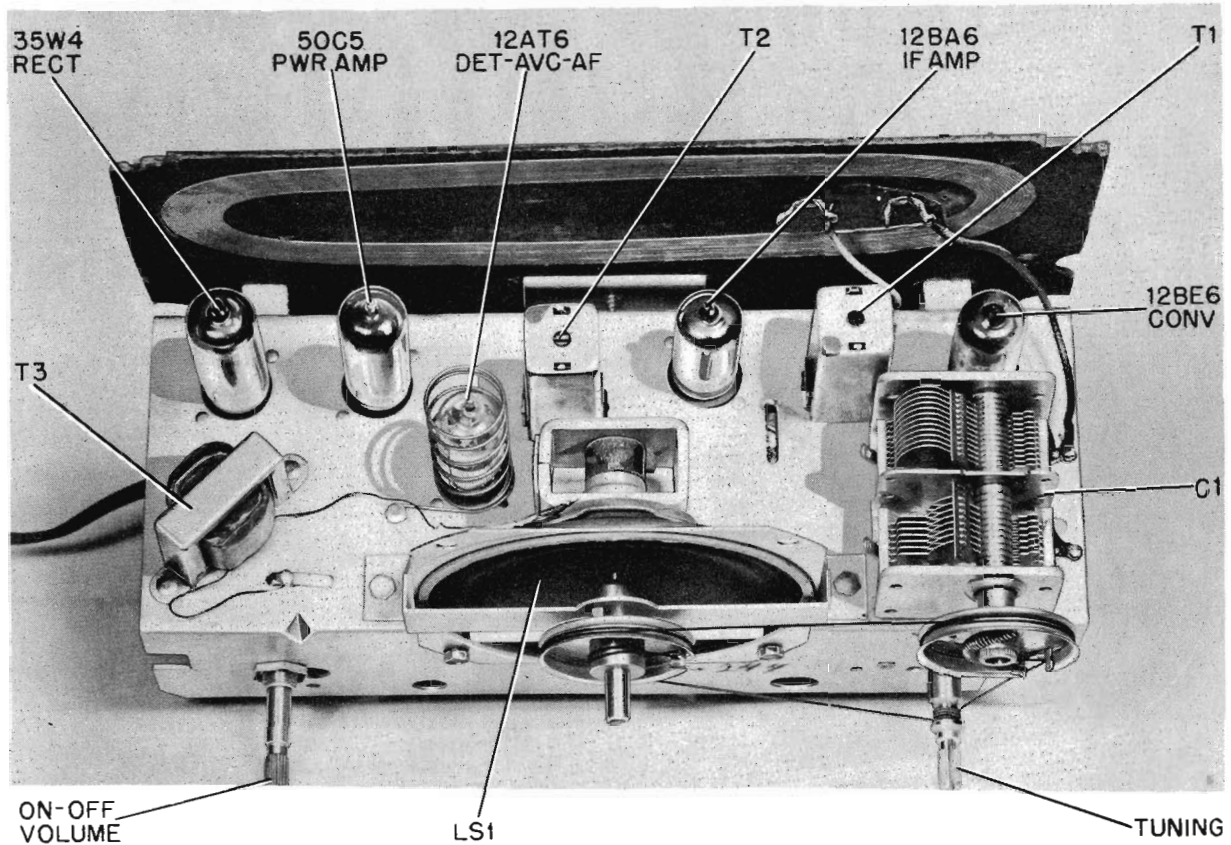
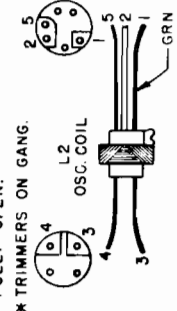


FIGURE 3. PARTS LOCATIONS



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REPLACEMENT PARTS LIST

NOTE: When ordering parts, specify model number of set in addition to part number and description of part.

Ref. No.	Part Number	Description	List Price	Ref. No.	Part Number	Description	List Price
CHASSIS PARTS - ELECTRICAL				T-3	25K485973	Output transformer.....	1.45
<u>Capacitors</u>				<u>CHASSIS PARTS - MECHANICAL</u>			
C-1	19B600483	Variable, 2-gang: with pulley.....	2.30	Part Number	Description	List Price	
C-2	8R9821	Paper: .05 mf 200V.....	.25	CHASSIS PARTS - MECHANICAL			
C-3	8R9816	Paper: .05 mf 400V.....	.25	7K485971	Bracket, loop back mtg.....	.05	
C-4	8K72686	Paper: .15 mf 200V.....	.25	7A600476	Bracket, tuning shaft mtg.....	.10	
C-5	21B482847	Ceramic, multiple: 2000, 220, 220, 5000 mmf.....	.65	1X600606	Bracket and Bushing Assembly, pointer.....	.30	
C-6	8R9802	Paper: .02 mf 400V.....	.20	42A485548	Clip, coil can mtg.....doz	.35	
C-7	23B600855	Electrolytic: 50-30 mf/150V.	1.60	30A470651	Cord, line and plug: 6 ft long....	.75	
<u>Capacitor-Resistor</u>				5A19658	Eyelet, spacer (gang mtg).....doz	.20	
CR-1	21B601007	2000, 110, 110, 5000 mmf; 6.8 meg; 470,000, 470,000 ohms.....	.85	5A70404	Grommet, rubber (gang mtg).....	.05	
<u>Coils</u>				14A482844	Insulator, cord outlet.....doz	.25	
L-1	24K630198	Loop Antenna Assembly: includes back panel.....	1.30	29R3010	Lug, soldering.....doz	.30	
L-2	24K600812	BC Oscillator.....	.90	2S7051	Nut, hex: Palnut (volume control mtg).....doz	.15	
<u>Speaker</u>				1V600590	Pulley and Bushing Assembly, pointer drive.....	.25	
LS-1	50C691401	Speaker, PM: 4"; 3.2 ohm VC.	4.70* exch 3.55	3S7148	Setscrew: 6-32 x 1/8; Allen head; stl; cad pl (pointer drive pulley retainer).....	.10	
or	50K610097			47K600598	Shaft, pointer: brass.....	.10	
or	50B601106			1K600594	Shaft and Pulley Assembly, tuning	.20	
or	50K610110			26A481521	Shield, spring (for 12BA6 tube)doz	.50	
<u>Resistors</u>				9R119819	Socket, tube: miniature; 7-prong; with dummy lug and center shield; wafer type.....	.15	
Note: All resistors are insulated, carbon type unless otherwise specified.				41A73996	Spring, tension (electrolytic mtg)	.05	
R-1	6R6028	22,000 20% 1/2W.....doz	1.20	41A14244	Spring, tension (drive cord)...doz	.55	
R-2	6R6018	100 20% 1/2W.....doz	1.20	4K692188	Washer, "C" (tuning shaft retainer and pointer shaft retainer)...doz	.20	
R-3	6R2118	3.3 meg 20% 1/2W.....doz	1.20	4S7633	Washer, flat: 9/16 x 11/64 x .033 thick; stl; cad pl (loop back mtg).....doz	.15	
R-4	18K600473	Volume control: 1 meg; includes on-off switch.....	1.00	4K482859	Washer, insulated shoulder.....doz	.15	
R-5	6R2109	10 meg 20% 1/2Wdoz	1.20	CABINET PARTS			
R-6	6R6032	470,000 20% 1/2W.....doz	1.20	16E630222	Cabinet, table model: walnut (92-531).....	4.85	
R-7	6R6032	470,000 20% 1/2W.....doz	1.20	16K630224	Cabinet, table model: ivory (92-532).....	4.95	
R-8	6R3992	150 20% 1/2W.....doz	1.20	16K630225	Cabinet, table model: green (92-533).....	4.95	
R-9	6R5683	27 10% 1/2W.....doz	1.20	15B630206	Cover, pointer.....	1.10	
R-10	6R3953	1000 20% 1W.....	.20	36B600566	Knob, control: walnut (92-531)....	.25	
<u>Transformers</u>				36K600567	Knob, control: ivory (92-532)....	.25	
T-1,2	24B485553	IF and Diode transformer: 455 Kc; complete.....	1.45	36K600568	Knob, control: green (92-533)....	.25	
				38A25507	Plug, split (back cover mtg)...doz	.15	
				52B600537	Pointer, dial.....	.20	

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

*Plus Federal Excise Tax At Current Rate

